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Applicant : Bruce B. Roesner, Ph.D.
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Attorney's Docket No.: 16165-005001

Amendments to the Claims:

This listing of claims replaces all prior versions and listings of claims in the application:

Listing of Claims:

1. (cancelled)

2. (cancelled)

3. (currently amended) The passive radio frequency identification tag of claim 12, wherein the command sequence comprises at least a portion of a binary search protocol.

4. (cancelled)

5. (cancelled)

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6. (currently amended) The Δ passive radio frequency identification tag of claim 5,

comprising:

an antenna;

a radio frequency interface coupled with the antenna; and

control logic that initiates a deep sleep state in response to an event, the deep sleep state comprising a non-responsive state that is independent of supplied power, and the control logic providing a following state entered upon conclusion of the non-responsive state, wherein communications initiate from the following state, wherein the following state comprises an initial communication state from a plurality of communication states, wherein the plurality of communication states allow response to a sequence of associated commands when receipt of the command sequence begins in the initial communication state; wherein the deep sleep state initiates in response to an event comprising receipt of a deep sleep command; wherein the non-responsive state concludes in response to a first occurring event from events comprising receipt of a wake command and internal cessation of the non-responsive state; and where the control logic further provides a sleep state that is entered upon power up and an isolate state that is entered upon receipt of an isolate command, the sleep and isolate states being dependent upon supplied power, wherein the sleep, isolate and non-responsive states conclude upon receipt of a full wake command, and the sleep and isolate states, but not the non-responsive state, conclude upon receipt of a partial wake command.

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7. (currently amended) ~~The~~ A passive radio frequency identification tag of claim 5,

comprising:

an antenna;
a radio frequency interface coupled with the antenna; and
control logic that initiates a deep sleep state in response to an event, the deep sleep state
comprising a non-responsive state that is independent of supplied power, and the control logic
providing a following state entered upon conclusion of the non-responsive state, wherein
communications initiate from the following state, wherin the following state comprises an
initial communication state from a plurality of communication states, wherein the plurality of
communication states allow response to a sequence of associated commands when receipt of the
command sequence begins in the initial communication state; wherein the deep sleep state
initiates in response to an event comprising receipt of a deep sleep command; wherein the
non-responsive state concludes in response to a first occurring event from events comprising
receipt of a wake command and internal cessation of the non-responsive state; and where the
control logic further provides a sleep state that is entered upon power up and an isolate state that
is entered upon receipt of an isolate command, the sleep and isolate states being dependent upon
supplied power, wherin the sleep and non-responsive states, but not the isolate state, conclude
upon receipt of a full wake command, and the sleep and isolate states, but not the non-responsive
state, conclude upon receipt of a partial wake command.

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8. (currently amended) The A passive radio frequency identification tag of claim 5,
comprising:
an antenna;
a radio frequency interface coupled with the antenna; and
control logic that initiates a deep sleep state in response to an event, the deep sleep state
comprising a non-responsive state that is independent of supplied power, and the control logic
providing a following state entered upon conclusion of the non-responsive state, wherein
communications initiate from the following state, wherein the following state comprises an
initial communication state from a plurality of communication states, wherein the plurality of
communication states allow response to a sequence of associated commands when receipt of the
command sequence begins in the initial communication state; wherein the deep sleep state
initiates in response to an event comprising receipt of a deep sleep command; wherein the
non-responsive state concludes in response to a first occurring event from events comprising
receipt of a wake command and internal cessation of the non-responsive state; and where the
control logic further provides a sleep state that is entered upon power up and an isolate state that
is entered upon receipt of an isolate command, the sleep and isolate states being dependent upon
supplied power, wherein the sleep and non-responsive states, but not the isolate state, conclude
upon receipt of a full wake command, and the sleep state, but not the isolate and non-responsive
states, conclude upon receipt of a partial wake command.

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9. (currently amended) ~~The A~~ passive radio frequency identification tag of claim 5, comprising:

an antenna;

a radio frequency interface coupled with the antenna; and

control logic that initiates a deep sleep state in response to an event, the deep sleep state comprising a non-responsive state that is independent of supplied power, and the control logic providing a following state entered upon conclusion of the non-responsive state, wherein communications initiate from the following state, wherein the following state comprises an initial communication state from a plurality of communication states, wherein the plurality of communication states allow response to a sequence of associated commands when receipt of the command sequence begins in the initial communication state; wherein the deep sleep state initiates in response to an event comprising receipt of a deep sleep command; wherein the non-responsive state concludes in response to a first occurring event from events comprising receipt of a wake command and internal cessation of the non-responsive state; and where the control logic further provides a sleep state that is entered upon power up and an isolate state that is entered upon receipt of an isolate command, the sleep and isolate states being dependent upon supplied power, wherein the sleep, isolate and non-responsive states conclude upon receipt of a full wake command, and the sleep state, but not the isolate and non-responsive states, conclude upon receipt of a partial wake command.

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10. (currently amended) The passive radio frequency identification tag of claim [[5]]
6, where the radio frequency interface comprises an analog portion of a complementary metal
oxide semiconductor (CMOS) integrated circuit (IC), the control logic comprises a digital
portion of the CMOS IC, and the internal cessation of the non-responsive state comprises a
voltage decay of a charged RC circuit in the CMOS IC.

11. (currently amended) The ~~A~~ passive radio frequency identification tag of claim 4,
comprising:

an antenna;
a radio frequency interface coupled with the antenna; and
control logic that initiates a deep sleep state in response to an event, the deep sleep state
comprising a non-responsive state that is independent of supplied power, and the control logic
providing a following state entered upon conclusion of the non-responsive state, wherein
communications initiate from the following state, wherein the non-responsive state concludes
upon internal cessation, the following state comprises an isolate state, and the deep sleep and
isolate states conclude upon receipt of a full wake command.

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12. (currently amended) ~~The~~ A passive radio frequency identification tag of claim 1,
comprising:

an antenna;
a radio frequency interface coupled with the antenna; and
control logic that initiates a deep sleep state in response to an event, the deep sleep state
comprising a non-responsive state that is independent of supplied power, and the control logic
providing a following state entered upon conclusion of the non-responsive state, wherein
communications initiate from the following state, wherein the non-responsive state concludes
upon internal cessation, the following state comprises the non-responsive state reinitiated, and
the deep sleep state concludes upon receipt of a full wake command.

13. (currently amended) The passive radio frequency identification tag of claim 12,
wherein the antenna comprises a near-field coupling element configured to operate in a high
frequency band.

14. (currently amended) The passive radio frequency identification tag of claim 12,
further comprising a non-volatile memory.

15. (cancelled)

16. (cancelled)

17. (cancelled)

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18. (cancelled)

19. (cancelled)

20. (currently amended) The A system of claim 19, comprising:
a radio frequency identification (RFID) tag reader that sends commands including at least
one sequence of associated commands used to identify an RFID tag on an article; and
multiple passive RFID tags, each tag being attached to an article and each tag comprising
a radio frequency sub-system and control logic coupled with the radio frequency sub-system,
wherein the control logic resets tag communications and initiates a non-responsive state in
response to at least one event, the non-responsive state being independent of supplied power, and
the control logic responds to a wake command but ignores other commands in the command
sequence while the tag is in the non-responsive state, and the wake command response concludes
the non-responsive state;

wherein the control logic further provides a sleep state that is entered upon power up and an isolate state that is entered upon receipt of an isolate command, the sleep and isolate states being dependent upon supplied power, wherein the sleep, isolate and non-responsive states conclude upon receipt of a full wake command, and the sleep and isolate states, but not the non-responsive state, conclude upon receipt of a partial wake command.

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21. (currently amended) The A system of claim 19, comprising:
a radio frequency identification (RFID) tag reader that sends commands including at least
one sequence of associated commands used to identify an RFID tag on an article; and
multiple passive RFID tags, each tag being attached to an article and each tag comprising
a radio frequency sub-system and control logic coupled with the radio frequency sub-system,
wherein the control logic resets tag communications and initiates a non-responsive state in
response to at least one event, the non-responsive state being independent of supplied power, and
the control logic responds to a wake command but ignores other commands in the command
sequence while the tag is in the non-responsive state, and the wake command response concludes
the non-responsive state;

wherein the control logic further provides a sleep state that is entered upon power up and
an isolate state that is entered upon receipt of an isolate command, the sleep and isolate states
being dependent upon supplied power, wherein the sleep and non-responsive states, but not the
isolate state, conclude upon receipt of a full wake command, and the sleep and isolate states, but
not the non-responsive state, conclude upon receipt of a partial wake command.

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22. (currently amended) The A system of claim 19, comprising:
a radio frequency identification (RFID) tag reader that sends commands including at least
one sequence of associated commands used to identify an RFID tag on an article; and
multiple passive RFID tags, each tag being attached to an article and each tag comprising
a radio frequency sub-system and control logic coupled with the radio frequency sub-system,
wherein the control logic resets tag communications and initiates a non-responsive state in
response to at least one event, the non-responsive state being independent of supplied power, and
the control logic responds to a wake command but ignores other commands in the command
sequence while the tag is in the non-responsive state, and the wake command response concludes
the non-responsive state;

wherein the control logic further provides a sleep state that is entered upon power up and
an isolate state that is entered upon receipt of an isolate command, the sleep and isolate states
being dependent upon supplied power, wherein the sleep and non-responsive states, but not the
isolate state, conclude upon receipt of a full wake command, and the sleep state, but not the
isolate and non-responsive states, conclude upon receipt of a partial wake command.

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23. (currently amended) The Δ system of claim 19, comprising:
a radio frequency identification (RFID) tag reader that sends commands including at least
one sequence of associated commands used to identify an RFID tag on an article; and
multiple passive RFID tags, each tag being attached to an article and each tag comprising
a radio frequency sub-system and control logic coupled with the radio frequency sub-system,
wherein the control logic resets tag communications and initiates a non-responsive state in
response to at least one event, the non-responsive state being independent of supplied power, and
the control logic responds to a wake command but ignores other commands in the command
sequence while the tag is in the non-responsive state, and the wake command response concludes
the non-responsive state;

wherinc the control logic further provides a sleep state that is entered upon power up and
an isolate state that is entered upon receipt of an isolate command, the sleep and isolate states
being dependent upon supplied power, wherein the sleep, isolate and non-responsive states
conclude upon receipt of a full wake command, and the sleep state, but not the isolate and
non-responsive states, conclude upon receipt of a partial wake command.

24. (currently amended) The system of claim 19 20, wherein the non-responsive state
also concludes upon internal cessation.

25. (original) The system of claim 24, wherein each tag comprises an antenna and an
integrated circuit (IC) that comprise the radio frequency sub-system and the control logic, and
the internal cessation of the non-responsive state comprises a voltage decay of a charged RC
circuit in the IC.

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26. (original) The system of claim 25, wherein the antenna comprises a near-field coupling element configured to operate in a high frequency band, and the IC further comprises a non-volatile memory.

27. (cancelled)

28. (currently amended) ~~The~~ A passive radio frequency identification tag of claim 27, comprising:

means for receiving power and commands in a command structure; and
means for entering a deep sleep state comprising a reset of the command structure and a
non-responsive state that is independent of supplied power, wherein the non responsive state
concludes in response to receipt of a wake command;

wherein the means for entering the deep sleep state comprise:

means for preventing premature triggering of the deep sleep state; and

means for maintaining the deep sleep state when power is reapplied after loss of the received power.

29. (new) The passive radio frequency identification tag of claim 7, where the radio frequency interface comprises an analog portion of a complementary metal oxide semiconductor (CMOS) integrated circuit (IC), the control logic comprises a digital portion of the CMOS IC, and the internal cessation of the non responsive state comprises a voltage decay of a charged RC circuit in the CMOS IC.

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30. (new) The passive radio frequency identification tag of claim 8, where the radio frequency interface comprises an analog portion of a complementary metal oxide semiconductor (CMOS) integrated circuit (IC), the control logic comprises a digital portion of the CMOS IC, and the internal cessation of the non responsive state comprises a voltage decay of a charged RC circuit in the CMOS IC.

31. (new) The passive radio frequency identification tag of claim 9, where the radio frequency interface comprises an analog portion of a complementary metal oxide semiconductor (CMOS) integrated circuit (IC), the control logic comprises a digital portion of the CMOS IC, and the internal cessation of the non responsive state comprises a voltage decay of a charged RC circuit in the CMOS IC.

32. (new) The passive radio frequency identification tag of claim 11, where the radio frequency interface comprises an analog portion of a complementary metal oxide semiconductor (CMOS) integrated circuit (IC), the control logic comprises a digital portion of the CMOS IC, and the internal cessation of the non responsive state comprises a voltage decay of a charged RC circuit in the CMOS IC.

33. (new) The passive radio frequency identification tag of claim 12, where the radio frequency interface comprises an analog portion of a complementary metal oxide semiconductor (CMOS) integrated circuit (IC), the control logic comprises a digital portion of the CMOS IC, and the internal cessation of the non responsive state comprises a voltage decay of a charged RC circuit in the CMOS IC.

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34. (new) The system of claim 21, wherein the non-responsive state also concludes upon internal cessation.

35. (new) The system of claim 22, wherein the non responsive state also concludes upon internal cessation.

36. (new) The system of claim 23, wherein the non responsive state also concludes upon internal cessation.

37. (new) A system comprising:

a radio frequency identification (RFID) tag reader that sends commands including at least one sequence of associated commands used to identify an RFID tag on an article; and

multiple passive RFID tags, each tag being attached to an article and each tag comprising a radio frequency sub-system and control logic coupled with the radio frequency sub-system, wherein the control logic resets tag communications and initiates a non-responsive state in response to at least one event, the non-responsive state being independent of supplied power, and the control logic responds to a wake command but ignores other commands in the command sequence while the tag is in the non-responsive state, and the wake command response concludes the non-responsive state;

wherein the non-responsive state concludes upon internal cessation, the control logic provides an isolate state entered upon conclusion of the non-responsive state, and the isolate state concludes upon receipt of the wake command.

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38. (new) The system of claim 37, wherein each tag comprises an antenna and an integrated circuit (IC) that comprise the radio frequency sub-system and the control logic, and the internal cessation of the non-responsive state comprises a voltage decay of a charged RC circuit in the IC.

39. (new) A system comprising:
a radio frequency identification (RFID) tag reader that sends commands including at least one sequence of associated commands used to identify an RFID tag on an article; and
multiple passive RFID tags, each tag being attached to an article and each tag comprising a radio frequency sub-system and control logic coupled with the radio frequency sub-system, wherein the control logic resets tag communications and initiates a non-responsive state in response to at least one event, the non-responsive state being independent of supplied power, and the control logic responds to a wake command but ignores other commands in the command sequence while the tag is in the non-responsive state, and the wake command response concludes the non-responsive state;
wherein the non-responsive state concludes upon internal cessation, and the non-responsive state is reinitiated upon conclusion of the non-responsive state by internal cessation.

40. (new) The system of claim 39, wherein each tag comprises an antenna and an integrated circuit (IC) that comprise the radio frequency sub-system and the control logic, and the internal cessation of the non-responsive state comprises a voltage decay of a charged RC circuit in the IC.